



# FEMA

## WISCONSIN DEPARTMENT OF NATURAL RESOURCES, CAMP DRESSER AND MCKEE, INC.

AND

## FEDERAL EMERGENCY MANAGEMENT AGENCY COOPERATING TECHNICAL PARTNERS MAPPING ACTIVITY STATEMENT

### **Mapping Activity Statement No. WI-05-01**

### **Digital Flood Insurance Rate Map Production and Development of Updated Flood Data for 11 Counties in Wisconsin**

In accordance with the Cooperating Technical Partners (CTP) Partnership Agreement dated September 14, 2001 between Wisconsin Department of Natural Resources and the Federal Emergency Management Agency (FEMA), Mapping Activity Statement (MAS) No. WI-05-01 is as follows.

### **Section 1—Objective and Scope**

The objective of the Flood Map Project documented in this MAS is to develop a Digital Flood Insurance Rate Map (DFIRM) and Flood Insurance Study (FIS) report for 11 Wisconsin Counties including: Adams, Calumet, Door, Eau Claire, Fond Du Lac, Jefferson, Kenosha, Racine, Sheboygan, St. Croix, and Washington. The DFIRM and FIS report will be produced in the FEMA Countywide Format. Final product will be NAVD88 for vertical datum and NAD83 for horizontal datum.

In addition, the Mapping Partners involved in this project will develop new and/or updated flood hazard data according to decisions made at community scoping meetings and negotiated with FEMA. Appendix A includes an exhibit for each county that defines the specifics and details for the map modernization effort such as stream segments for which new detailed will be provided under this collaborative effort, stream segments for which current FIS detailed study will be re-delineated using best available topographic base map data, and segments for which approximate study will be provided.

This Flood Map Project will be a collaboration of the following:

- Wisconsin Department of Natural Resources;
- Southeast Wisconsin Regional Planning Commission (for Kenosha, Racine and Washington Counties); and
- CDM Federal Programs Corporation (CDM), under IDIQ contract to FEMA Region V;
- Baker Corporation, under contract to FEMA as National Service Provider (NSP)

The activities for this Flood Map Project and the Mapping Partners and the general responsibilities for their completion are summarized in the table below. The sections of this MAS that follow the table below describe the specific activities of WDNR and CDM, the FEMA standards that must be met, and resultant deliverables.

#### General Roles and Responsibilities

Activities	CTP	FEMA
Activity 1 – Scoping	X	X
Activity 2 – Outreach	X	
Activity 3 – Field Surveys and Reconnaissance		X
Activity 4 – Topographic Data Development		X
Activity 6 –Hydrologic Analyses	X	
Activity 7–Independent QA/QC Review of Hydrologic Analyses		X
Activity 8 – Hydraulic Analyses		X
Activity 9 – Independent QA/QC Review of Hydraulic Analyses		X
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)		X
Activity 10A – Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)		X
Activity 10B – Floodplain Mapping (Refinement or Creation of Zone A)	X	
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	X	
Activity 12 – Base Map Acquisition)	X	
Activity 14 – Digital Flood Insurance Rate Map Production (Merge Revised and Non-Revised Information)	X	
Activity 14A – Application of DFIRM Graphic and Database Specifications	X	
Activity 14B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications	X	
Activity 15 – Preliminary DFIRM and FIS Report Distribution		X
Activity 16 – Post-Preliminary Processing		X

FEMA has developed tools to assist in the development of the flood hazard data studies and the Digital Flood Insurance Rate Maps (DFIRMs) if the CTP wishes to use them. FEMA will, through the NSP, provide all CTPs access to and training in these tools. The tools available at this time include WISE

software and the DFIRM production tools. The use of these tools will improve the Map Modernization and efficiency of all mapping partners.

The Data Capture Standard submittals will be required at the following study milestones:

- Project Scoping Completed
- Terrain Data Processing Completed
- Field Survey Completed
- Hydrology Completed
- Hydraulics (Riverine and Coastal) Completed

QA/QC review activities may be performed by CTPs or the NSP at the discretion of FEMA. If the CTP will be utilizing their staff or contractors to do the QA/QC review, this should be identified during scoping. The CTP will need to submit their QA/QC plan with checklist to the Regional Project Officer for approval. Please note the NSP will also be performing periodic audits and overall study/project management to ensure study quality.

FEMA will be providing download/upload capability for intermediate data submittals through the Management Information Portal (MIP). Data submittals uploaded via the MIP, will include the same data required prior to the existence of the MIP.

### **Activity 1 – Scoping**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V, and WDNR. The details of this activity are provided through a separate CDM task order with FEMA which governs the contractor's work. The general approach for this activity is presented below for coordination purposes.

**Scope:** This task involves identifying and capturing community and stakeholder mapping needs, identifying and compiling an inventory of available data from a variety of sources, and educating local communities and stakeholders on DFIRM production and post preliminary processes and the opportunities for local participation. Data acquired through the scoping process will generally be imported into the WISE Scoping Tool. In the Scoping Tool, all streams should have unique names, the limits of the effective FEMA studies should be identified, LOMC areas should be identified, and community requests should be identified. This task also includes populating the streamlines with existing pipeline and scoped studies currently underway.

FEMA Region V and WDNR will coordinate and conduct the Scoping Meeting. This includes identifying a time, place, and contacting all participants. The purpose of this meeting is to present the current information to the local officials (state, county and municipal) and prioritize study needs and identify existing data relevant to those needs. CDM shall attend this meeting and be responsible for compiling information required to facilitate documentation and decision-making. Materials compiled prior to the meeting may include: FIS and FIRM for affected communities; USGS quads or other readily available topographic map data; effective FIRM summary; Available Data Inventory; Scoping Map, consisting of digital or hard copy print of stream as obtained from WISE Scoping Tool; and digital or hard copy print of the proposed panel layout.

CDM and the WDNR will work jointly to review initial mapping needs list, review the research findings, and make selections of proposed methods for obtaining/producing flood data. All available data sources should be considered at this time, including other Federal and State Agencies, Community Assistance Visits (CAV's), FEMA archives, the MNUSS database, and community surveys, if available. Any additions or changes to the needs list shall be discussed with all members. All needs shall also be prioritized. In general, highest priority shall be given to the following areas: areas of dense existing or anticipated development, including areas where new road crossings have been constructed over stream(s); areas affected by flood-control structures and/or channelization; areas where natural physical changes in the floodplain have been significant (due to subsidence or extreme erosion, for example); areas that were studied by approximate methods and unmapped areas, especially those with development pressure; areas where the community has experienced flooding outside mapped floodplains, with severe damage to buildings and/or infrastructure; areas where mapped flood hazards do not match those shown on contiguous FIRMs (unless those FIRMs are not considered to be accurate); and areas where flood data (BFEs, floodplains, and regulatory floodways) are likely to be changed the most by a restudy.

Based on the discussion of mapping needs, the CDM and the FEMA Project Officer will finalize the areas to be included in the project (based on recommendations provided by the Project Team). Areas to be studied by detailed and approximate methods shall be identified. The following issues will be discussed and refined: Review and Refinement of Flood Hazard Identification Methodologies, Review of Proposed Paneling Scheme, Review and Refinement of Base and Topographic Map Source, and Finalization of Map Production and Database Options.

Standards: All work under Activity 1 shall be performed in accordance with the standards specified in Section 5 of this MAS.

#### Products

CDM shall be responsible for:

- Populated WISE Scoping Tool;
- Technical Proposal, Business Proposal, QASP and PRS draft documents; and
- Technical Proposal, Business Proposal, QASP and PRS final documents

The above discussion represents the general approach for the scoping task for CDM. The specific details are contained in Task Order 005, contract HSFE05-05-D-0027/TO005.

## Activity 2 – Outreach

Responsible Mapping Partner: WDNR

Scope: The outreach activities for a Flood Map Project can best be understood as a process that begins during the Project Scoping phase and continues through the Map Production and Post-preliminary phases. A regulatory overview of required activities is followed by a description of tools that can be used in working with stakeholders to keep them informed and to solicit their input.

The overarching goal for conducting outreach is to create a climate of understanding and ownership of the mapping process at the State and local levels. Well-planned outreach activities can reduce political stress, confrontation in the media, and public controversy, which can arise from lack of information, misunderstanding, or misinformation. These outreach activities also can assist FEMA and other members of the Project Team in responding to congressional inquiries.

The WDNR will work with the FEMA Regional Office during the initiation of this activity to determine an Outreach Plan for implementation throughout the Mapping Project. The Regional Office will have access to many outreach tools that have been developed for this process that can be utilized or customized for your use. CDM will assist WDNR by supplying supporting information or interim products to WDNR or by providing a link to these materials at a CDM website.

All communication with local governments will be done in accordance with Title 44 Code of Federal Regulations Part 66.

This activity also includes some engineering support activities, such as assembling all input model data into a readable form, (HEC-2 input/output), assembling and scanning work maps, documentation of hydrology, etc, and putting new studies into FEMA FIS format.

Standards: All work under Activity 2 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon determination of an Outreach and Coordination Approach the WDNR shall deliver the following to the FEMA Regional Project Officer in accordance with the schedule outlined in Section 6 for this Activity:

- A report detailing outreach and coordination activities
- Backup or supplemental information used in writing this report
- At the completion of the DFIRM process, WDNR will submit a summary of outreach activities and any changes made in the outreach approach based on the actual implementation

### **Activity 3 - Field Surveys and Reconnaissance**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: To supplement any field reconnaissance conducted during the Project Scoping phase of this project, for detailed study areas, CDM shall conduct a detailed field reconnaissance of the specific study area to determine conditions along the floodplain(s), locations of cross sections to be surveyed, and other parameters needed for the hydrologic and hydraulic analyses.

In addition to the initial field reconnaissance, if necessary, CDM shall conduct field surveys, including obtaining channel and floodplain cross sections, identifying or establishing Temporary Bench Marks, and obtaining the physical dimensions of hydraulic and flood-control structures. CDM shall also coordinate survey with other Mapping Partners that are collecting topographic data under Activity 4.

This activity may not be necessary for every county. The details of this activity are county-specific and are identified in Appendix A, in the exhibit for each county.

Standards: All work under Activity 3 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the Technical Support Data Notebook (TSDN) format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, CDM shall make the following products available to FEMA by uploading the digital data to the Multi-Hazard Information Platform (MIP) or submitting it to the FEMA Regional Office if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity. Where paper documentation is required by State Law for Professional certifications, it will be acceptable to submit the paper documentation in addition to a scanned version of the paper for the digital record.

Deliverables include:

- A report summarizing the findings of the field reconnaissance;
- Maps and drawings that provide the detailed survey results; and
- Survey notebook containing cross sections and structural data.
- FEMA format survey database or data delivery consistent with FEMA's Data Capture Standards – Appendix N of the *Guidelines and Specifications for Flood Mapping Partners*

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 4 - Topographic Data**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: CDM shall obtain available topographic data of the overbank areas of the flooding sources studied to delineate floodplain boundaries. CDM shall gather information on what topographic data is available for the given community and what accuracy and currency it meets and shall use the best available topographic data meeting FEMA standards or as directed by the Regional Project Officer.

Standards: All work under Activity 4 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of topographic data collection and processing for the flooding sources identified during the scoping meetings, CDM shall upload the digital data to the MIP or submit by using

other digital media if the MIP is unavailable, so that CDM can perform an independent QA/QC review in accordance with the approved QAP and schedule outlined in Section 6 for this Activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, CDM shall also make the following products available to FEMA by submitting it to the FEMA Regional Office via the digital media identified in the paragraph above, if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity. Where paper documentation is required by State Law for Professional certifications, it will be acceptable to submit the paper documentation in addition to a scanned version of the paper for the digital record. Topographic data deliverables may include the following:

- Digital topographic maps;
- Report summarizing methodology and results;
- Mass points and breaklines data;
- Digital work maps with contours;
- Checkpoint analyses to assess the accuracy of data, including Root Mean Square Error calculations to support vertical accuracy;
- Identification of remote-sensing data voids and methods used to supplement data voids;
- National Geodetic Survey data sheets for Network Control Points used to control remote- sensing and ground surveys; and
- Metadata compliant with Federal Geographic Data Committee standards.
- FEMA format terrain database or data delivery consistent with the FEMA Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners
- A QA/QC report that includes a description and results of automated or manual QA/QC steps taken during the development or review of the topographic data.

The details of this activity are county-specific and are identified in Appendix A, in the exhibit for each county.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 6 – Hydrologic Analyses**

Responsible Mapping Partner: WDNR

Scope: WDNR shall perform hydrologic analyses for the square miles of drainage area for the detailed study area flooding source(s) identified during the scoping phase.

WDNR shall calculate peak flood discharges for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events using the United States Army Corps of Engineers (USACE) Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) computer program. These flood discharges will be the basis for subsequent hydraulic analyses under Activity 8. In addition, WDNR shall address all concerns or questions regarding Activity 4 that are raised during the independent QA/QC review performed by WDNR during the QA/QC review under Activity 7.

If Geographic Information System (GIS)-based modeling is used, WDNR shall document automated data processing and modeling algorithms and provide them to FEMA to ensure they are consistent with the standards outlined above. If non-commercial (i.e., custom-developed) software is used for the analysis, then WDNR shall provide full user documentation, technical algorithm documentation, and the software to FEMA for review before performing the hydrologic analyses.

WDNR shall perform an independent QA/QC of the hydrologic analyses according to the TSDN and shall provide CDM with final flow results for use in the hydraulic analyses. CDM will provide comments on the reasonableness of the hydrologic results based on their application in the hydraulic analysis. WDNR will respond to comments and resolve as appropriate. WDNR shall be responsible for the technical and regulatory adequacy, completeness of required information, and supporting data and documentation.

The details of this activity are county-specific and are determined by the detailed study areas identified in Appendix A, in the exhibit for each county.

Standards: All work under Activity 6 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Hydrologic modeling (input and output) files for the 10-, 2-, 1-, and 0.2-percent-annual-chance storm events;
- The Summary of Discharges Table presenting discharge data for the flooding sources for which hydrologic analyses were performed;
- Draft text for Section 3.1, Hydrologic Analyses, of the FIS report; and
- All backup data used in the analysis, including work maps.
- FEMA format hydrology database or intermediate data delivery consistent with the FEMA Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners

For GIS-based modeling, deliverables shall include all input and output data, intermediate data processing products, and GIS data layers.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 7 - Independent QA/QC Surveillance Level Review of Hydrologic Analyses**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: CDM shall perform a surveillance level review of WDNR's QA/QC process. This review will verify the QA/QC process and provide a spot-check of technical, scientific, and other information submitted by WDNR under Activity 6. FEMA may audit or assist in these activities if deemed to be necessary by the Regional Project Officer. CDM will apply WDNR flows to the hydraulic analysis and will identify any discrepancies or other issues that may require a revision or modification of hydrologic analysis results by WDNR.

Standards: All work under Activity 7 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the FEMA IDIQ contractor shall make the following products available to FEMA by uploading the digital data to the Multi-Hazard Information Platform (MIP) or submitting it to the FEMA Regional Office if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity.

- A Summary Report that describes the findings of the surveillance level QA/QC review and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 8 – Hydraulic Analyses**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: CDM shall perform hydraulic analyses for the miles of the flooding sources identified for detailed study during the scoping phase. The modeling will include the 10-, 2-, 1-, and 0.2-percent-annual-chance events based on peak discharges computed under Activity 6. The hydraulic methods used for this analysis will include HEC-2 or HEC-RAS.

CDM shall use any cross-section and field data collected under Activity 3 necessary to perform the hydraulic analyses. The hydraulic analyses will be used to establish flood elevations and regulatory floodways for the subject flooding sources. Where floodway analyses are available and are determined to meet FEMA standards, the floodway results will be used as is. In other areas where floodways are not available, CDM will utilize the hydraulic models to generate a floodway run or an “effective flow area” digital output that can be used in preparing floodplain maps.

CDM shall use the FEMA CHECK-2 or CHECK-RAS checking program to check the reasonableness of the new detailed study hydraulic analyses, if HEC-2 or HEC-RAS are utilized. To facilitate the independent QA/QC review under Activity 9, CDM shall provide explanations for unresolved messages from the CHECK-2 or CHECK-RAS program, as appropriate. In addition, CDM shall facilitate WDNR resolution of concerns or questions regarding Activity 6 that are raised during the independent QA/QC review under Activity 9.

<Optional paragraph for GIS-based modeling> {Insert name of responsible Mapping Partner} shall document automated data processing and modeling algorithms for GIS-based modeling and provide them to FEMA for review to ensure they are consistent with the standards outlined above. If non-commercial (i.e., custom-developed) software is used for the analyses, then {Insert name of responsible Mapping

Partner} shall provide full user documentation, technical algorithm documentation, and software to FEMA for review before performing the hydraulic analyses

The details of this activity are county-specific and are determined by the detailed study areas identified in Appendix A, in the exhibit for each county.

Standards: All work under Activity 8 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Upon completion of hydraulic modeling for the flooding sources identified during the scoping phase, CDM will upload the digital data to the MIP or submit by using other digital media if the MIP is unavailable, so that CDM can access it for the independent QA/QC review under Activity 9. CDM shall submit the results of the hydraulic analyses for the remaining flooding sources for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the FEMA IDIQ contractor shall make the following products available to FEMA submitting it to the FEMA Regional Office via the digital media identified in the paragraph above, if the MIP is unavailable. Where paper documentation is required by State Law for Professional certifications, you may submit the paper in addition to a scanned version of the paper for the digital record.

- Draft Digital profiles of the 10-, 2-, 1- and 0.2-percent-annual-chance water-surface elevations representing existing conditions using the FEMA RASLOT program or similar software;
- Draft Digital Floodway Data Tables for each flooding source that is compatible with the DFIRM database;
- Digital hydraulic modeling (input and output) files;
- Digital tables with range of Manning's "n" values;
- Explanations for unresolved messages from the CHECK-2 or CHECK-RAS program, as appropriate;
- Digital versions of all backup data used in the analyses;
- Digital versions of draft text for inclusion in the FIS report.
- For GIS-based modeling, deliverables include all input and output data, intermediate data processing products, GIS data layers, and final products in the format of the DFIRM database structure.
- FEMA format hydraulic database or data delivery consistent with the FEMA Data Capture Standards –Appendix N of the Guidelines and Specifications for Flood Mapping Partners

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 9 - Independent QA/QC Review of Hydraulic Analyses**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: CDM shall review the technical, scientific, and other information prepared under Activity 8 for consistency with FEMA standards and standard engineering practice and adequacy to revise the FIRM. If CDM utilizes a contractor to perform the QA/QC, the contractor shall not be the same one who performed the original analyses. FEMA may audit or assist in these activities if deemed to be necessary by the Regional Project Officer. This work shall include, at a minimum, the activities listed below.

- Review the submittal for technical and regulatory adequacy, completeness of required information, and supporting data and documentation. The technical review is to focus on the following:
  - Use of acceptable model(s);
  - Starting water-surface elevations;
  - Cross-section geometry;
  - Manning's "n" values and expansion/contraction coefficients;
  - Bridge and culvert modeling;
  - Flood discharges;
  - Regulatory floodway computation methods; and
  - Tie-in to upstream and downstream non-revised Flood Profiles.
- Use the CHECK-2 or CHECK-RAS program as appropriate to flag potential problems and focus review efforts.
- Maintain records of all contacts, reviews, recommendations, and actions and make them readily available to FEMA.
- Maintain an archive of all data submitted for hydraulic modeling review. (All supporting data must be retained for 3 years from the date funding recipient submits its final expenditure report to FEMA.)

Standards: All work under Activity 9 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, the FEMA IDIQ contractor shall make the following products available to FEMA by uploading the digital data to the Multi-Hazard Information Platform (MIP) or submitting it to the FEMA Regional Office if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity.

- A Summary Report that describes the findings of the independent QA/QC review; and
- Recommendations to resolve any problems that are identified during the independent QA/QC review.
- If the data changed during the QA/QC process under Activity 7 or this Activity, then the updated and verified deliverables from Activity 6 and 8 will be resubmitted at this time by WDNR and CDM, respectively.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 10 - Floodplain Mapping (Detailed Riverine or Coastal Analysis)**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: CDM shall delineate the 1- and 0.2-percent-annual-chance floodplain boundaries and the regulatory floodway boundaries (if required) for the flooding sources for which detailed hydrologic, and/or hydraulic, and/or coastal analyses were performed. CDM shall incorporate all new or revised hydrologic, hydraulic, and/or coastal modeling and shall use the topographic data acquired under Activity 4 to delineate the floodplain and regulatory floodway boundaries on a digital work map. In addition, CDM shall incorporate the results of all known effective Letters of Map Change (LOMCs) within the revised areas, as appropriate. Also, CDM shall address all concerns or questions regarding Activity 10 that are raised by WDNR during the independent QA/QC review under Activity 11.

CDM shall delineate a floodway based on acceptable available information, or effective flow area and HEC floodway runs.

The details of this activity are county-specific and are determined by the detailed study areas identified in Appendix A, in the exhibit for each county.

Standards: All work under Activity 10 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: Deliverables for Activities 10, 10A and 10B are provided in Activity 10B.

## **Activity 10A - Floodplain Mapping (Redelineation of Detailed Floodplain Boundaries Using Updated Topographic Data)**

Responsible Mapping Partner: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: CDM shall delineate the 1- and 0.2-percent-annual-chance floodplain boundaries and the regulatory floodway boundaries and coastal high hazard zones (if required) for the flooding sources in the Appendix. CDM shall use the topographic data acquired under Activity 4 to delineate the floodplain and regulatory floodway boundaries as appropriate on a digital work map. If the new topographic data do not reflect the same hydraulic characteristics as in the effective study, CDM shall evaluate the topographic data to determine if changes are significant enough to invalidate the floodplain boundary and regulatory floodway boundary. If so, CDM shall contact the FEMA Regional Project Officer identified in Section 12 of this MAS with a recommendation. In addition, the FEMA IDIQ contractor shall address all concerns or questions regarding Activity 10A that are raised by WDNR during the independent QA/QC review under Activity 11.

Coastal redelineation involves the following steps: redelineate the landward extent of the coastal flooding based on existing stillwater elevations and the new topography. All gutters (elevation change lines between open water and the landward extent of the coastal flooding) need to be digitized (these lines are not directly related to the topography so they should be digitized directly). If the Primary Frontal Dune (PFD) VE Zone has not been mapped, this must also be done during redelineation. PFD involves using the best available topographic data and mapping the heel or landward side of the primary frontal dune. The VE zone shall then be extended landward to that line.

## Activity 10B - Floodplain Mapping (Refinement or Creation of Zone A)

Responsible Mapping Partner: WDNR

Scope: WDNR shall delineate the 1-percent-annual-chance floodplain boundaries for the approximate study flooding sources listed in Appendix A.3 or in the Scoping Report. WDNR shall use existing topographic data or the topographic data acquired under Activity 2 to delineate the floodplain boundaries on a digital work map. In addition, WDNR shall address all concerns or questions regarding Activity 10B that are raised by WDNR during the independent QA/QC review under Activity 11.

WDNR may expand on the approaches for analyzing Zone A areas outlined in *Guidelines and Specifications for Flood Hazard Mapping Partners* and in FEMA 265, *Managing Floodplain Development in Approximate Zone A Areas* (April 1995), and/or develop new approaches. Such approaches must be coordinated with the FEMA Regional Project Officer identified in Section 12 of this MAS before analysis and mapping begin.

Standards: All work under Activity 10, 10A, and 10B shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables for Activities 10 / 10A / 10B: Upon completion of floodplain mapping for all existing zone A areas that need redelinating, WDNR shall upload the digital data to the MIP or submit by using other digital media if the MIP is unavailable, so that WDNR can access it for the independent QA/QC review under Activity 11. The mapping for the remaining flooding sources is to be submitted for a final QA/QC review at the completion of this activity.

In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to by submitting it to the FEMA Regional Office via the digital media identified in the paragraph above, if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity. Where paper documentation is required by State Law for Professional certifications, it is acceptable to submit the paper documentation in addition to a scanned version of the paper for the digital record.

- Digital work map showing the Coastal High Hazard Area (V zone) delineated along Great Lakes' shorelines, transect locations, BFEs, and flood insurance risk zone designation labels;
- For detailed studies, digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- For approximate studies, digital work maps showing the 1-percent-annual-chance floodplain boundary delineations, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the floodplain mapping tasks;

- Any backup or supplemental information used in the mapping required for the independent QA/QC review outlined under Activity 9; and
- An explanation for the use of existing topography for the studied reaches, if appropriate.
- Written summary of the analysis methodologies;
- Any backup or supplemental information, including supporting calculations and assumptions for any computed 1-percent-annual-chance water-surface elevations used in the mapping required for the independent QA/QC review under Activity 11;
- Digital versions of input and output for any computer programs that were used;
- FEMA format mapping database or data delivery consistent with the FEMA Data Capture Standards – Appendix N of the Guidelines and Specifications for Flood Mapping Partners
- If automated GIS-based models are applied, all input data, output data, intermediate data processing products, and GIS data layers shall be submitted.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 11 - Independent QA/QC Review of Floodplain Mapping (Revised Areas)**

Responsible Mapping Partner: WDNR

Scope: WDNR shall review the floodplain mapping submitted by CDM and WDNR under Activities 10, 10A, and 10B to ensure that the results of the analyses performed are accurately represented. If WDNR utilizes a contractor to perform the QA/QC, the contractor shall not be the same one who performed the original analyses. FEMA may audit or assist in these activities if deemed to be necessary by the Regional Project Officer. This work shall include, at a minimum, the activities listed below.

- For the coastal flood hazard analyses, review the setup and runup height elevations shown on the work map to ensure they agree with those shown on the data table(s), and stillwater elevations are shown where coastal and riverine flooding studied in detail join.
- Review the cross sections for proper location and orientation on the work map and agreement with the Floodway Data Table.
- Review the BFEs shown on the work map for proper location and agreement with the results of the hydraulic modeling.
- Review the regulatory floodway widths for agreement with the widths shown in the Floodway Data Table and the results of the hydraulic modeling.
- Review the floodplain boundaries for agreement with the flood elevations shown in the Floodway Data Table and the contour lines and other topographic information shown on the work maps.
- Review the floodplain widths at cross sections as shown on the work maps to ensure they match the Floodway Data Table.
- Review the floodplain boundaries as shown on the work maps to ensure they match the Flood Profiles.
- Review the delineation interface between detailed studies and approximate studies and merge the floodplains as appropriate.

- Review the flood insurance risk zones as shown on the work maps to ensure they are labeled properly.
- Review the DFIRM mapping files to ensure they were prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix N*.
- Review the metadata files to ensure they include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 11 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to FEMA by uploading the digital data to MIP or submitting it to the FEMA Regional Office if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity.

- A Summary Report that describes the findings of the QA/QC review, noting any deficiencies in or agreeing with the mapping results;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- If the data changed during the QA/QC process, then the updated deliverables from Activity 10, 10A and 10B will be resubmitted at this time.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 12 - Base Map Acquisition**

Responsible Mapping Partner: WDNR

Scope: Activity 12 consists of obtaining the best available digital base map data for the project, including vector data and digital orthophotos. WDNR shall provide the digital base map. The required activities are as follows:

- Obtain digital files (raster or vector) of the base map.
- Secure necessary permissions from the map source to allow FEMA's use and distribution of hardcopy and digital map products using the digital base map, free of charge.
- Certify that the digital data meets the minimum standards and specifications that FEMA requires for DFIRM production.
- Populate the DFIRM database with the information required by FEMA.
- FEMA and the WDNR will work together inside the CTP Executive Committee structure to procure re-projection of existing orthophoto data, or otherwise identify and obtain acceptable base map data, including vector data, in accordance with national map projection standards used by FEMA's web based Mapping Information Platform (MIP). This joint effort should be

completed by July 30, 2006. If FEMA funding is not sufficient to complete this task, additional funding may be requested from FEMA's Flood Map Modernization appropriation or other federal sources inside Fiscal Year 2006.

Standards: All work under Activity 12 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Written certification that the digital data meet the minimum standards and specifications and
- Documentation that FEMA can use the digital base map.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 14 – Digital Flood Insurance Rate Map Production (Merge Revised and Non-Revised Information)**

Responsible Entity: WDNR

Scope: Upon completion of the floodplain mapping tasks (Tasks 10, 10A and/or 10B of this MAS) for the revised flooding sources and the DFIRM production for non-revised areas (Task 13 of this MAS), the digital floodplain data shall be merged into a single, updated Digital FIRM. This work shall include tying in flood profiles, floodplain boundaries and floodways with contiguous communities that were not studied as part of this MAS. WDNR shall resolve differences.

Standards: All work under Activity 14 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- DFIRM mapping files in one of the FEMA-approved GIS file formats. These files shall be provided on CD-ROM.
- DFIRM database files in one of the FEMA-approved database formats. These files shall also be provided on CD-ROM.
- Metadata files describing the DFIRM data are to be provided in FEMA-approved format.
- A complete set of plots of the DFIRM panels showing all detail at the scale(s) agreed upon in the task order shall be provided.

- A QA/QC report that includes a description and the results of automated or manual QA/QC steps taken during the preparation of the DFIRMS. This report shall be certified in accordance with contractor's QAP.
- Backup or supplemental information used in the creation of the DFIRM is required to be included in the submission.

### **Activity 14A – DFIRM Production (Application of DFIRM Graphics and Database Specifications)**

Responsible Mapping Partner: WDNR

Scope: WDNR shall apply the final FEMA DFIRM graphic and database specifications to the DFIRM files produced under Activity 14. This work shall include adding all required annotation, line pattern, area shading, and map collar information (e.g., map borders, title blocks, legends, notes to user). WDNR will be preparing the database for this project in the Standard format. The database shall be produced in accordance with Appendix L of the Guides and Specifications for Flood Hazard Mapping Partners. WDNR shall coordinate with those Mapping Partners responsible for Activities 10, 10A, 10B, 13, and 14, as necessary, to resolve any problems that are identified during Activity 14A.

Standards: All work under Activity 14A shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to FEMA by uploading the digital data to the MIP or submitting it to the FEMA Regional Office if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Section 6 for this Activity. Where paper documentation is required by State Law for Professional certifications, it is acceptable to submit the paper documentation in addition to a scanned version of the paper for the digital record.

- Digital work maps showing the 1- and 0.2-percent-annual-chance floodplain boundary delineations, regulatory floodway boundary delineations, cross sections, BFEs, flood insurance risk zone labels, and all applicable base map features;
- DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*;
- Complete set of plots of DFIRM panels showing all detailed flood hazard information at a suitable scale; and
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM.
- FEMA format DFIRM database or data delivery consistent with the FEMA Guidelines and Specifications for Flood Mapping Partners.

The details of this activity are county-specific and are determined by the parameters identified in Appendix A, in the exhibit for each county.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf).

## **Activity 14B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications**

Responsible Mapping Partner: WDNR

Scope: Upon completion of the floodplain mapping activities (Activities 10, 10A, and/or 10B) and DFIRM production activities (Activities 14 and 14A), WDNR shall review the DFIRM to ensure it meets current FEMA graphic specifications. In addition, WDNR shall review the DFIRM spatial database to determine if it meets current FEMA database specifications. WDNR shall coordinate with other Mapping Partners, as necessary, to resolve any problems identified during this QA/QC review. If WDNR utilizes a contractor to perform the QA/QC, the contractor shall not be the same one who performed the original analyses. FEMA may audit or assist in these activities if deemed to be necessary by the Regional Project Officer. This work shall ensure that the requirements below are met.

- All required DFIRM features are accurately and legibly labeled and follow the examples shown in the FEMA DFIRM specifications. This includes all flood insurance risk zones, BFEs, cross sections, studied streams, mapped political entities, and all roads within and adjacent to the 1-percent-annual-chance floodplains.
- All DFIRM features are correctly symbolized with the appropriate symbol, line pattern, or area shading and follow the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- All map collar information is complete, correct, and follows the requirements specified in *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- DFIRM mapping files are in one of the GIS file and database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- DFIRM database files are in one of the database formats specified in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners* and conform to those specifications for content and attribution.
- Metadata files describing the DFIRM data include all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*.

The FIS report is prepared in the FEMA Countywide Format as documented in Appendix J of *Guidelines and Specifications for Flood Hazard Mapping Partners*.

Standards: All work under Activity 14B shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners*, WDNR shall make the following products available to FEMA by uploading the digital data to the Multi-Hazard Information Platform (MIP) or submitting it to the FEMA Regional Office if the MIP is unavailable. This submittal will occur in accordance with the schedule outlined in Appendix C.

- A Summary Report that describes the findings of the QA/QC review noting any deficiencies in or agreeing with the mapping results and the results of all automated or manual QA/QC steps taken during the independent QA/QC review;
- Recommendations to resolve any problems that are identified during the independent QA/QC review; and
- If the data changed during the QA/QC process, then the updated deliverables from Activities 10, 10A, 10B and Activities 13, 14, and 14A will be resubmitted at this time.

Appendix M may be downloaded from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/pdf/fhm/firm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/firm_gsam.pdf).

## **Activity 15 - Preliminary DFIRM and FIS Report Distribution**

Responsible Mapping Partners: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V

Scope: Activity 15 consists of the final preparation, review, and distribution of the Preliminary copies of the DFIRM and FIS report for community official and general public review and comment. FEMA may audit or assist in these activities if deemed to be necessary by the Regional Project Officer. The activities to be performed are summarized below.

*15.1 Preliminary FIS Compilation.* CDM shall merge new and effective FIS text, tables, and profiles and produce one countywide FIS report.

*15.2 Preliminary Transmittal Letter Preparation.* CDM shall prepare letters and transmit the Preliminary copies of the DFIRM and FIS report and related enclosures to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA. This letter may be prepared for FEMA only or FEMA and CDM's signature.

*15.3 Final QA/QC Review of Preliminary DFIRM and FIS Report:* CDM shall perform a final QA/QC review of the Preliminary DFIRM and FIS report, including all data tables, Flood Profiles, and other components of the FIS report. The QA/QC review procedures shall be consistent with the *Guidelines and Specifications for Flood Hazard Mapping Partners*.

*15.4 Discrepancy Resolution:* CDM shall work with WDNR to resolve discrepancies identified during the final QA/QC review. Any discrepancies in the Preliminary DFIRM panels will be corrected by WDNR and new panels resubmitted to CDM for review.

*15.5 Distribution of Preliminary DFIRM and FIS Report:* CDM shall distribute the Preliminary copies of the DFIRM and FIS report electronically to all affected communities, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others as directed by FEMA. Hard copies will not be distributed.

*15.6 News Release Preparation:* CDM shall prepare news release notifications of BFE changes for all affected communities, if appropriate and perform QA/QC reviews of the notices for accuracy and compliance with FEMA format requirements. CDM shall file the notifications for later submittal to FEMA for review.

*15.7 Preliminary Summary of Map Actions (SOMA) Preparation:* CDM shall prepare Preliminary SOMAs for all affected communities if appropriate. The SOMA shall list pertinent information

regarding LOMCs that will be affected by the issuance of the DFIRM (i.e., superseded, incorporated, re-validated, needs further examination).

The details of this activity are county-specific and are determined by the parameters identified in Appendix A, in the exhibit for each county.

Standards: All work under Activity 15 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners* and the requirements documented in Section 1 and Appendix A of the *FEMA Document Control Procedures Manual*. CDM shall make the products listed below available to FEMA in accordance with the schedule outlined in Section 6 for this Activity.

- Preliminary transmittal letters shall be prepared and transmitted. These letters and any additional letters requested by FEMA shall be prepared in accordance with the current version of the *FEMA Document Control Procedures Manual*.
- Preliminary electronic copies of the DFIRM and FIS report, including all updated data tables and Flood Profiles shall be mailed to the Chief Executive Officer (CEO) and /or floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional Office, and others, as directed by FEMA. The number of DFIRM plots and FIS reports will be limited to one (1) hard copy.
- Preliminary SOMAs, prepared in accordance with FEMA requirements, shall be provided as appropriate.
- Revised DFIRM mapping files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided by uploading the digital data to the MIP or submitting it by using other digital media if the MIP is unavailable.
- Revised DFIRM database files, prepared in accordance with the requirements in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided by uploading the digital data to the MIP or submitting it by using other digital media if the MIP is unavailable.
- Revised metadata files describing the DFIRM data, including all required information shown in *Guidelines and Specifications for Flood Hazard Mapping Partners*, shall be provided by uploading the digital data to the MIP or submitting it by using other digital media if the MIP is unavailable.
- A Summary Report that describes and provides the results of all automated or manual QA/QC review steps taken during the preparation of the DFIRM shall be provided.

## **Activity 16 - Post-Preliminary Processing**

Responsible Mapping Partners: CDM Federal Programs Corp., under IDIQ contract to FEMA Region V and FEMA. The details of this activity are provided through a separate CDM task order with FEMA which governs the contractor's work. The general approach for this activity is presented below for coordination purposes.

Scope: Activity 16 consists of finalizing the DFIRM and FIS report after the Preliminary copies of the DFIRM and FIS report have been issued to community officials and the public for review and comment.

FEMA may audit or assist in these activities if deemed to be necessary by the Regional Project Officer. The activities to be performed are summarized below.

*16.1 Initiation of Statutory 90-Day Appeal Period:* When required, upon completion of final coordination meeting with the all communities in the project area, CDM shall arrange for and verify that the following activities are completed in accordance with the current version of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* and *Document Control Procedures Manual*:

- Proposed BFE determination letters are sent to the community CEOs and floodplain administrators.
- News release notifications of BFE changes are published in prominent newspapers with local circulation in accordance with 44 CFR.
- CDM shall prepare the appropriate notices (Proposed Rules) are to be published in the *Federal Register*. The FEMA IDIQ contractor shall then deliver those notices to FEMA for publication.
- When CDM holds public meetings to present and discuss the results of this Flood Map Project, FEMA may attend the meetings and assist where possible if requested.

*16.2 Resolution of Appeals and Protests:* WDNR shall assist CDM in the review and resolution of appeals and protests received during the 90-day appeal period. This will be a collaborative effort with responsibilities related to the original activity. In SEWRPC counties, CDM and WDNR will seek the assistance of the Planning Commission in the resolution of appeals and protests related to its data and leverage studies. For each appeal and protest, the following activities shall be conducted as appropriate:

- Initial processing and acknowledgment of submittal;
- Technical review of submittal;
- Preparation of letter(s) requesting additional supporting data;
- Performance of revised analyses; and
- Preparation of a draft resolution letter for cosignature with FEMA and the FEMA IDIQ contractor and revised DFIRM and FIS report materials for FEMA review.

CDM shall mail all associated correspondence upon authorization by FEMA.

*16.3 Preparation of Special Correspondence:* CDM shall support FEMA in responding to comments not received within the 90-day appeal period (referred to as “special correspondence”), including drafting responses for FEMA review when appropriate and finalizing responses for cosignature. CDM also shall mail the final correspondence (and enclosures if appropriate) and distribute appropriate copies of the correspondence and enclosures upon receipt of authorization from FEMA.

*16.4 Revision of FIRM and FIS Report:* If necessary, CDM shall work together with FEMA and WDNR to revise the DFIRM and FIS report and shall distribute Revised electronic Preliminary copies of the DFIRM and FIS report to the CEO and floodplain administrator of each affected community, all other Project Team members, the State NFIP Coordinator, the FEMA Regional

Office, and others as directed by FEMA. Resulting changes to the Revised Preliminary DFIRM panels will be corrected by CDM.

*16.5 Final SOMA Preparation:* CDM shall prepare Final SOMAs for the affected communities as appropriate.

*16.6 Processing of Letter of Final Determination:* CDM shall work with FEMA to establish the effective date for the DFIRM and FIS report, and shall prepare a Letter of Final Determination (LFD) for each affected community for FEMA review in accordance with the FEMA *Document Control Procedures Manual*. They shall also mail the final signed LFDs and enclosures and distribute appropriate copies of the signed LFDs and enclosures upon receipt of authorization from FEMA.

*16.7 Processing of Final DFIRM and FIS Report for Printing:* CDM shall prepare final reproduction materials for the DFIRM and FIS report and provide these materials to the FEMA Map Service Center for printing by the U.S. Government Printing Office. The NSP shall prepare the appropriate paperwork to accompany the DFIRM and FIS report (including Print Processing Worksheet, Printing Requisition Forms, and Community Map Actions Form) and transmittal letters to the community CEOs.

*16.8 Revalidation Letter Processing.* CDM shall prepare and distribute letters for FEMA signature to the community CEOs and floodplain administrators to notify the affected communities about LOMCs for which determinations will remain in effect after the DFIRM and FIS report become effective.

*16.9 Archiving Data:* CDM shall package the technical and administrative support data in the FEMA required format and store it in the library archives until they are transmitted to the FEMA Engineering Study Data Package Facility. In addition, CDM will maintain copies of all data for a period of no less than 3 years.

Standards: All work under Activity 16 shall be performed in accordance with the standards specified in Section 5 of this MAS.

Deliverables: In accordance with the TSDN format described in described in Appendix M of *Guidelines and Specifications for Flood Hazard Mapping Partners* and the requirements documented in Section 1 and Appendix A of the FEMA *Document Control Procedures Manual*, as appropriate for each county, CDM shall make the following products available to FEMA in accordance with the schedule outlined in Section 6 for this Activity:

- Documentation that the news releases were published in accordance with FEMA requirements;
- Documentation that the appropriate *Federal Register* notices (Proposed and Final Rules) were published in accordance with FEMA requirements;
- Draft and final Special Correspondence (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final Appeal and Protest acknowledgment, additional data, and resolution letters (and all associated enclosures, backup data, and other related information) for FEMA review and signature as appropriate;
- Draft and final LFDs (and all associated enclosures, backup data, and other related information) for FEMA review and signature;
- Final FIS report materials, including all updated data tables and Flood Profiles;

- Paperwork for the final DFIRM and FIS report materials;
- Transmittal letters for the printed DFIRM and FIS report;
- LOMC revalidation letters if appropriate; and
- Complete, organized archived technical and administrative support data
- Complete, organized and archived case file and flood elevation docket

The above discussion represents the general approach for the post preliminary production task for CDM. The specific details are contained in Task Order 004, contract HSFE05-05-D-0027/TO004.

## Section 2—Technical and Administrative Support Data Submittal

The Project Team members for this Flood Map Project that have responsibilities for activities included in this MAS shall comply with the data submittal requirements summarized below.

All supporting documentation for the activities in this Mapping Activity Statement shall be submitted in the TSDN format in accordance with Appendix M of the FEMA Guidelines and Specifications for Flood Hazard Mapping Partners, dated April 2003. Appendix M is available for viewing or download on the FEMA Web site at [http://www.fema.gov/pdf/fhm/frm\\_gsam.pdf](http://www.fema.gov/pdf/fhm/frm_gsam.pdf). Table 2-1 indicates the sections of the TSDN that apply to each mapping activity.

If any issues arise that could affect the completion of an activity within the proposed scope or budget, the responsible Mapping Partner shall complete a Special Problem Report (SPR) as soon as possible after the issue is identified and submitted to FEMA. The SPR is to describe the issue and propose possible resolutions. (For additional information on SPRs, refer to Appendix M, Subsection M.2.1.1 of Guidelines and Specifications for Flood Hazard Mapping Partners.)

**Table 2-1. Mapping Activities and Applicable TSDN Sections**

TSDN Section	1	2	3	4	5	6	7	8	9	10, 10A, 10B	11	12	14A	15	16
General Documentation															
Special Problem Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Telephone Conversation Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Meeting Minutes/Reports	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General Correspondence	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

<b>Engineering Analyses</b>															
Hydrologic Analyses			X			X	X	X	X	X	X				
Hydraulic Analyses			X			X	X	X	X	X	X				
Key to Cross-Section Labeling			X			X	X	X	X	X	X				
Key to Transect Labeling			X			X	X	X	X	X	X				
<b>Draft FIS Report</b>						X	X	X	X						
<b>Mapping Information</b>	X	X		X	X					X	X	X	X	X	X
<b>Miscellaneous Reference Information</b>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

### **Section 3—Period of Performance**

The mapping activities outlined in this MAS will begin on October 1, 2005, and will be completed no later than September 30, 2007. The mapping activities performed by WDNR may be terminated at the option of FEMA or WDNR in accordance with the provisions of the Partnership Agreement dated September 14, 2001. If these Mapping Activities are terminated; the remaining funds from uncompleted activities, provided by FEMA for this Mapping Activity Statement, will be returned to FEMA.

CDM will perform the mapping activities listed in this MAS for DFIRM production based upon a 12 month period of performance according to Task Order 002. CDM has assumed a start date of October 1, 2005.

### **Section 4—Funding/Leverage**

FEMA is providing funding to WDNR, under Cooperative Agreement, for the completion of certain tasks in accordance with the “General Roles and Responsibilities” table found in Section 1. WDNR shall provide any additional resources required to complete the assigned activities for this Flood Map Project. Activities associated with any additional needs would be performed based on availability of funds. Detailed leverage information has been estimated in the Budget Projections table found in Appendix C.

This Section does not apply to CDM.

### **Section 5—Standards**

The standards relevant to this Mapping Activity Statement are provided in Tables 5-1 and 5-2. Information on the correct volume, appendix, section, or subsection of the FEMA *Guidelines and Specifications for Flood Hazard Mapping Partners* to be referenced for each mapping activity are summarized in Table 5-2.

These Guidelines are available for viewing or download from the FEMA Flood Hazard Mapping Web site at [http://www.fema.gov/fhm/dl\\_cgs.shtm](http://www.fema.gov/fhm/dl_cgs.shtm).

Table 5-1. Applicable Standards for Project Activities

Applicable Standards	1	2	3	4	5	6	7	8	9	10, 10 A, 10 B	11	12	14A	15	16
<i>Guidelines and Specifications for Flood Hazard Mapping Partners</i> , April 2003	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
American Congress on Surveying and Mapping Procedures	X		X	X	X										
Global Positioning System (GPS) Surveys: National Geodetic Survey (NGS-510), "Guidelines for Establishing GPS-Derived Ellipsoid Heights," November 1997	X		X	X	X										
Engineer Manual 1110-1-1000, <i>Photogrammetric Mapping</i> (USACE), July 1, 2002	X		X	X	X										
Engineer Manual 1110-2-1003, <i>Hydrographic Surveys</i> (USACE), January 1, 2002	X		X												
"Numerical Models Accepted by FEMA for NFIP Usage," Updated April 2003	X					X	X	X	X						
<i>Content Standard for Digital Geospatial Metadata</i> (Federal Geographic Data Committee), 1998	X	X		X	X					X	X	X	X	X	X
<i>Document Control Procedures Manual</i> , December 2000	X	X												X	
<i>44 Code of Federal Regulations Part 66 and 67</i>		X													

**Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications**

<b>Activity Number</b>	<b>Activity Description</b>	<b>Applicable Volume, Section/Subsection, and Appendix</b>
1	Scoping	Appendix I, Scoping Report document attached in Appendix A to this Mapping Activity Statement
2	Outreach	44 Code of Federal Regulations Part 66 and 67
3	Field Surveys and Reconnaissance	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.4, A.5, A.6, A.7, and A.8 Appendix F, Section F.3 Appendices B, C, and M
4	Topographic Data Development	Volume 1, Section 1.4 (specifically Subsection 1.4.2.1) Appendix A, Sections A.2, A.3, A.7, and A.8 Appendix M
5	Independent QA/QC Review of Topographic Data	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.1) Appendix A, Sections A.2, A.3, A.7 (specifically Subsection A.7.5), and A.8 (specifically Subsection A.8.6) Appendix M
6	Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4) Appendix A, Section A.4 Appendix C, Sections C.1 and C.7 Appendices E, F, G, H, M, and N Appendix A, Section A.4 Appendices B, D, M, and N

**Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)**

<b>Activity Number</b>	<b>Activity Description</b>	<b>Applicable Volume, Section/Subsection, and Appendix</b>
<b>7</b>	Independent QA/QC Review of Hydrologic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1)
		Appendix A, Section A.4
		Appendix C, Section C.2
		Appendices E, F, G, H, and M
		Appendix A, Section A.4
<b>8</b>	Hydraulic Analyses	Appendices B, D, and M
		Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.4)
		Appendix A, Section A.4 (specifically Subsection A.4.7)
		Appendix C, Sections C.3 and C.7
		Appendices B, E, F, G, H, M and N
<b>9</b>	Independent QA/QC Review of Hydraulic Analyses	Volume 1, Section 1.4 (specifically Subsection 1.4.1)
		Appendix A, Section A.4 (specifically Subsection A.4.7)
		Appendix C, Section C.5
		Appendices B, E, F, G, H, and M
		Volume 1, Section 1.4 (specifically Subsection 1.4.2.3)
<b>10</b>	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	Appendix C, Sections C. 4 and C.6
		Appendix D, Sections D.2 (specifically Subsection D.2.7) and D.3 (specifically Subsection D.3.7)
		Appendices E, F, G, H, K, L, M, and N
<b>10A</b>	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.2 and 1.4.2.3)
		Appendix C, Section C.6 (specifically Subsection C.6.1.3)
		Appendices K, L, M, and N

**Table 5-2. Project Activities and Applicable Portions of FEMA Guidelines and Specifications (Cont'd)**

<b>Activity Number</b>	<b>Activity Description</b>	<b>Applicable Volume, Section/Subsection, and Appendix</b>
<b>10B</b>	Floodplain Mapping (Refinement or Creation of Zone A)	Volume 1, Section 1.4 (specifically Subsection 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendices K, L, M, and N
<b>11</b>	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	Volume 1, Section 1.4 (specifically Subsections 1.4.1 and 1.4.2.3) Appendix C, Sections C.4 and C.6 Appendix D, Sections D.2 (specifically Subsection D.2.7) and D.3 (specifically Subsection D.3.7) Appendices E, F, G, H, K, L, and M
<b>12</b>	Base Map Acquisition and Preparation	Volume 1, Section 1.3 (specifically Subsection 1.3.1.8) and 1.4 (specifically Subsections 1.4.3.1 and 1.4.3.2) Appendix A, Section A.1 (specifically Subsection A.1.1) Appendices K, L, M, and N
<b>14A</b>	DFIRM Production (Application of FEMA Graphics and Database Specifications)	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, M, and N
<b>14B</b>	Independent QA/QC Review of DFIRM Product Meeting FEMA Graphics and Database Specifications	Volume 1, Section 1.4 (specifically Subsections 1.4.2.3, 1.4.3.3, 1.4.3.9, and 1.4.3.10) Appendices K, L, and M
<b>15</b>	Preliminary DFIRM and FIS Report Distribution	Volume 1, Sections 1.4 (specifically Subsections 1.4.2 and 1.4.3) and 1.5 (specifically Subsection 1.5.1) Appendices J, K, L, and M
<b>16</b>	Post-Preliminary Processing	Volume 1, Section 1.5 (specifically Subsection 1.5.2) Appendices J, K, L, and M

## Section 6—Schedule

The activities documented in this MAS shall be completed in accordance with the project schedule for each county located in Appendix A. If changes to this schedule are required, the responsible Mapping Partner shall coordinate with FEMA and the other Mapping Partners in a timely manner.

## Section 7—Certifications

### **Activity 3 (Field Surveys and Reconnaissance) and Activity 4 (Topographic Data Development)**

A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic data, in accordance with 44 CFR 65.5(c). Certification of topographic data by the American Society for Photogrammetry and Remote Sensing is also acceptable.

### **Activity 6 (Hydrologic Analyses), Activity 8 (Hydraulic Analyses), Activity 10 (Floodplain Mapping— Detailed Riverine or Coastal Analysis), Activity 10A (Floodplain Mapping {Redelineation Using Effective Flood Profiles and Updated Topographic Data}), and Activity 10B (Floodplain Mapping {Refinement or Creation of Zone A})**

- A Registered Professional Engineer shall certify hydrologic and hydraulic analyses and data in accordance with 44 CFR 65.6(f).
- A Registered Professional Engineer or Licensed Land Surveyor shall certify topographic information in accordance with 44 CFR 65.5(c).
- Any levee systems to be accredited will be certified in accordance with 44 CFR 65.10(e).

### **Activity 10 (Floodplain Mapping— Detailed Riverine or Coastal Analysis), Activity 10A (Floodplain Mapping {Redelineation Using Effective Flood Profiles and Updated Topographic Data}), and Activity 10B (Floodplain Mapping {Refinement or Creation of Zone A}), Activity 11 (Independent QA/QC Review of Floodplain Mapping {Revised Areas}), and Activity 14A (DFIRM Production {Application of FEMA Graphics and Database Specifications})**

The DFIRM metadata files shall include a description of the horizontal and vertical accuracy of the DFIRM base map and floodplain information.

### **Activity 12 (Base Map Acquisition and Preparation)**

- A community official or responsible party shall provide written certification that the digital data meet FEMA minimum standards and specifications.
- The responsible Mapping Partner shall provide documentation that the digital base map can be used by FEMA. Please note that uploading base map data to the MIP does not constitute agreement that the digital base map can be used by FEMA. Documentation that the digital base map can be used by FEMA will still be required.

Certifications must be made at the time the intermediate data is submitted. For example, if hydrologic data is submitted, certification will be required at the time it is submitted.

## **Section 8—Technical Assistance and Resources**

Project Team members may obtain copies of FEMA-issued LOMCs, archived engineering backup data, and data collected as part of the Mapping Needs Assessment Process from the NSP, who may be contacted through your Regional Project Officer.

General technical and programmatic information, such as FEMA 265 and the Quick-2 computer program, can be downloaded from the FEMA Web site (<http://www.fema.gov/flhm/>). Specific technical and programmatic support may be provided through the NSP; such assistance should be requested through the FEMA Project Officer specified in Section 12 of this MAS.

Project Team members also may consult with the FEMA Regional Project Officer to request support in the areas of selection of data sources, digital data accuracy standards, assessment of vertical data accuracy, data collection methods or subcontractors, and GIS-based engineering and modeling training.

## **Section 9—WDNR Contractors**

WDNR does not intend to use the services of a contractor for the Flood Map Project documented in this Mapping Activity Statement. WDNR shall ensure that the procurement for all contractors, if any are used for this Flood Map Project, complies with the requirements of 44 CFR 13.36. Sub-part 13.36 may be downloaded in PDF or text format from the U.S. Government Printing Office Web site at [http://www.access.gpo.gov/nara/cfr/waisidx\\_04/44cfr13\\_04.html](http://www.access.gpo.gov/nara/cfr/waisidx_04/44cfr13_04.html).

## **Section 10—Reporting**

### **FINANCIAL REPORTING:**

Where specific WDNR actions are funded by FEMA, the financial reporting requirements will be in accordance with the FEMA Cooperative Agreement. WDNR shall provide financial reports to the FEMA Regional Project Officer and Assistance Officer in accordance with the terms of the signed Cooperative Agreement for this Mapping Activity Statement.

CDM will submit financial data according to Contract ' ' section F.6, which requires CDM to submit the financial status to date relative to the original plan by the 15<sup>th</sup> day of the following month to FEMA. For fixed price projects, this will be in terms of percent complete.

### **STATUS REPORTING:**

Where specific WDNR actions are funded by FEMA, the reporting requirements will be in accordance with the FEMA Cooperative Agreement. These requirements include the submission of status reports on a quarterly basis. The report shall generally follow the outline provided in FEMA's Cooperative Technical Partner (CTP) Quarterly Report (Version 5.3, February 2005). This form can be obtained through the FEMA Project Officer. The Project Officer, as needed, may request additional information on status.

In addition, WDNR and CDM shall both work with the FEMA Project Officer to establish an acceptable protocol for reporting of project information at the beginning of each project. WDNR and CDM will update the Multi-Hazard Information Platform (MIP) on a monthly basis. If the MIP is not available, the information shall be submitted to the Regional Management Center (RMC). The PO shall ensure that

key WDNR and CDM staff have been provided access and passwords to the MIP. The PO will also provide project-naming conventions for the MIP.

CDM will submit a monthly report to the Contracting Officer Technical Representative (COTR) and the Contracting Officer for Task Order 002 according to Contract I \_\_\_\_\_, which will include:

- A quantitative description of the overall progress;
- A description of any current problems and proposed corrective action;
- A discussion of the work to be performed during the next monthly reporting period, including an estimated completion time for each deliverable.

## **Section 11—Project Coordination**

In cooperation with the FEMA Region, a Project Management Team shall be established for coordinating the activities of this project and completing all tasks identified in this Statement of Work. This team would minimally consist of representatives of the WDNR, FEMA, CDM and the map mod county.

Throughout the project, all members of the Project Team will coordinate, as necessary, to ensure the products meet the technical and format specifications required and contain accurate, up-to-date information. Coordination activities shall include:

- Meetings, teleconferences, and videoconferences with FEMA and other Project Team members monthly. It is anticipated that the Project Management Team will meet several times throughout the project. Meetings may include a kickoff meeting at the beginning of the project, a progress meeting in the middle of the project and a technical review meeting when draft maps are available for review. These meetings will generally be held in each county, with the exception of SEWRPC counties, which may be held at SEWRPC.
- Project Team members CDM, WDNR, FEMA and the NSP will meet on a monthly basis in Madison to discuss progress and to resolve outstanding issues. This meeting is expected to coincide with monthly meetings of FEMA and WDNR. (Amanda, we may look to enter these into the activities somewhere so we can capture the costs)
- Telephone conversations with FEMA and other Project Team members on a scheduled basis on an ad hoc basis, as required;
- Updates to the MIP, and other FEMA status information systems in accordance with requirements in Volumes 1 and 3 of *Guidelines and Specifications for Flood Hazard Mapping Partners*; and Section 10; and
- E-mail, facsimile transmissions, and letters, as required.
- Integrated workgroup management among the Project Management Team, with special focus on transitional issues such as the interface between Tasks 13/14 and Task 15, where the translation of panel annotations may be especially difficult.

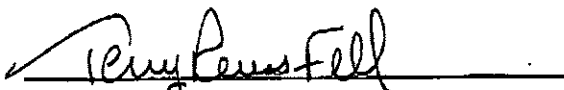
A project management plan will be developed by CDM that will outline CDM's activities for each of the counties listed in this MAS and the interface with WDNR.

## Section 12—Points of Contact

The CTP Project Manager is Amanda Schwoegler or subsequent personnel of comparable experience who are appointed to fulfill these responsibilities. Bob Watson, P.E., will serve as WDNR Project Engineer for execution of this MAS. The FEMA contacts are: Ken Hinterlong, Project Officer, and Lee Traeger, Technical Monitor.

CDM contacts are Daniel H. Lau, PE, Project Manager, and Michael Grasso, GIS Team Leader. The NSP representative for this MAS is Joshua Smith, P.E., Technical Manager for the NSP Regional Management Center located in Chicago.

WDNR and FEMA have caused this MAS to be executed by its duly authorized representative.



Terry Reuss Bell, Chief  
Hazard Identification and Risk Assessment Branch  
Federal Emergency Management Agency, Region V

Aug. 30, 2005  
Date



Richard Wedepohl, Chief  
Dam, Floodplain and Shoreland Management Section  
Bureau of Watershed Management  
Wisconsin Department of Natural Resources

Sept 1, 2005  
Date

Appendix A – Stream reaches for FIS Detailed Study Re-delineation,  
New detailed Study and Approximate Study

Note: Tables A.1 and A.2 to be completed by CDM at a later date

Table A.1 – Proposed New detailed Study  
Mapping Activity Statement No. WI-05-01  
August 29, 2005

<b>Flooding Source and Reach Limits</b>	<b>Reach Length (miles)</b>		<b>WDNR-approved hydrology available as of August 29, 2005? (Y/N)</b>
Total =			

Table A.2 – Current FIS Detailed Study for Re-delineation  
Mapping Activity Statement No. WI-05-01  
August 29, 2005

Flooding Source and Reach Limits	Reach Length (miles)		Effort to include model Conversion? (Y/N)
Total =			

Table A.3 – Estimates for Approximate Study  
Mapping Activity Statement No. WI-05-01  
August 29, 2005

Adams County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Big Roche a Cri Creek	41.0043	
Big Spring Creek	1.7050	
Bingham Creek	4.9595	
Campbell Creek	4.4818	
Carter Creek	15.4390	
Chester Creek	0.8382	
Corning Creek	2.8100	
Dead Horse Creek	9.6369	
Dry Creek	5.2404	
Duck Creek	6.6561	
Fairbanks Creek	3.8771	
Fordham Creek	6.5264	
Fourteenmile Creek	12.4273	
Gulch Creek	2.5116	
Klein Creek	0.6658	
Little Roche a Cri Creek	10.5954	
Neenah Creek	7.0243	
O'Keefe Creek	7.1810	
Peppermill Creek	1.7062	
Plainville Creek	2.7576	
Risk Creek	5.4431	
Shadduck Creek	2.8622	
Spring Branch	1.0356	
Trout Creek	0.9417	
Unnamed	38.7658	
Wisconsin River	0.1345	
Total =	197.2268	

## Calumet County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Black Creek	0.8934	
Cedar Creek	0.2364	
Killsnake River	4.0930	
Manitowoc River	0.3090	
Mill Creek	0.2524	
Mud Creek	0.1009	
North Branch Manitowoc River	15.9794	
Pine Creek	1.8314	
Roberts Creek	1.4753	
Sheboygan River	1.6436	
South Branch Manitowoc River	10.0258	
Spring Creek	4.7078	
Unnamed	49.2978	
Total =	90.8462	

## Door County, WI

Bear Creek	3.6813	
Ephraim Creek	0.1038	
Fish Creek	0.0321	
Heins Creek	0.7581	
Hibbard Creek	2.8656	
Hidden Springs Creek	0.0763	
Keyes Creek	3.9062	
Lilly Bay Creek	4.2135	
Logan Creek	5.2989	
Mink River	0.0086	
Piel Creek	2.3896	
Renard Creek	3.8082	
Schuyler Creek	4.1785	
Shivering Sands Creek	0.0017	
Silver Creek	0.1267	
Stony Creek	14.0543	
Sugar Creek	2.8467	
Three Springs Creek	1.7263	
Unnamed	22.8082	
Whitefish Bay Creek	1.1998	
Woodard Creek	2.9573	
Total =	77.0417	

## Eau Claire County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Adams Creek	1.3633	
Bears Grass Creek	15.3603	
Beaver Creek	17.1776	
Beeman Creek	2.3428	
Big Creek	3.7869	
Black Creek	10.5154	
Bridge Creek	17.3604	
Browns Creek	3.0408	
Chippewa River	0.0005	
Clear Creek	7.8292	
Coon Creek	4.5119	
Coon Fork Creek	3.3048	
Coon Gut Creek	2.5570	
Darrow Creek	0.1390	
Deinhammer Creek	2.5443	
Diamond Valley Creek	6.4253	
Eau Claire River	30.6052	
Elk Creek	0.4706	
Fall Creek	8.3003	
Fivemile Creek	3.1474	
Graham Creek	2.4802	
Hathaway Creek	3.6474	
Hay Creek	19.4571	
Horse Creek	5.7343	
Kelley Creek	0.7145	
Lindsay Creek	0.9331	
Little Niagara Creek	1.6331	
Loper Creek	2.0851	
Lowes Creek	5.0546	
McGaver Creek	1.8764	
Muskrat Creek	11.9799	
Ninemile Creek	10.2976	
North Fork Eau Claire River	12.4785	
Otter Creek	20.9209	
Pea Creek	4.5886	
Peeso Creek	4.6204	
Pine Creek	9.4481	
Rock Creek	6.1526	
Rush Creek	0.1682	

Sand Creek	4.0077	
Schoolhouse Creek	3.6173	
Sevenmile Creek	4.4997	
Shambaugh Creek	1.2399	
Sherman Creek	0.0781	
Simes Creek	1.0208	
Sixmile Creek	2.5257	
South Fork Eau Claire River	4.7034	
Swim Creek	1.0440	
Taylor Creek	5.4551	
Thompson Valley Creek	7.5720	
Travis Creek	5.1306	
Unnamed	150.8364	
West Creek	9.5782	
Whippoorwill Creek	3.0100	
Willow Creek	3.4450	
Wolf River	3.8348	
Total =	476.6523	

## Fond Du Lac County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Alto Creek	0.0086	
Anderson Creek	0.0042	
Auburn Lake Creek	7.6078	
Campground Creek	5.3984	
De Neveu Creek	0.8930	
East Branch Fond Du Lac River	7.1546	
East Branch Milwaukee River	12.5896	
Feldners Creek	1.4708	
Fond du Lac River	0.0061	
Grand River	5.1644	
Ladoga Creek	2.3955	
Milwaukee River	12.1575	
Mosher Creek	0.0404	
Mullet River	5.7036	
Parsons Creek	2.8290	
Pipe Creek	0.2324	
Sevenmile Creek	0.3483	
Sheboygan River	17.0054	
Silver Creek	0.7716	

South Branch Manitowoc River	9.9130	
South Branch Rock River	10.3768	
Taycheedah Creek	0.5887	
Unnamed	211.8088	
Van Dyne Creek	0.3505	
Virgin Creek	3.8459	
West Branch Fond Du Lac River	4.1724	
West Branch Milwaukee River	12.6739	
West Branch Rock River	19.7744	
Willow Creek	5.1100	
Total =	360.3956	

## Jefferson County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Allen Creek	6.2256	
Ashippun River	0.6081	
Bark River	20.5212	
Battle Creek	1.6850	
Crawfish River	8.8146	
Deer Creek	3.8461	
Duck Creek	9.7292	
Galloway Creek	0.6658	
Johnson Creek	16.3982	
Koshkonong Creek	0.0008	
Maunsha River	2.7548	
Mud Creek	2.0108	
Otter Creek	0.5705	
Rock Creek	9.9441	
Rock River	4.8246	
Scuppernong River	12.0687	
Spring Creek	3.7152	
Steel Brook	2.8982	
Stony Brook	11.3190	
Unnamed	229.8317	
Whitewater Creek	0.0042	
Total =	348.4364	

## Kenosha County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Barnes Creek	0.3521	
Brighton Creek	6.9225	
Jerome Creek	3.7397	
New Munster Creek	3.6095	
Palmer Creek	3.0657	
Peterson Creek	3.1029	
Pike River	0.0002	
Root River	5.7823	
Salem Branch	0.3143	
Spring Brook	0.2665	
Trevor Creek	2.4565	
Unnamed	38.1323	
Total =	67.7445	

## Racine County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Des Plaines River	0.3229	
Eagle Creek	0.4065	
Fox River	0.0259	
Hoods Creek	1.0469	
Hoosier Creek	0.0899	
Husher Creek	1.4378	
Pike River	0.0094	
Root River	0.0007	
Spring Brook	0.0069	
Unnamed	47.5951	
White River	0.0111	
Total =	50.9531	

## Sheboygan County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Barr Creek	1.7694	
Batavia Creek	0.1051	
Black River	5.3117	
Chambers Creek	1.7337	
Fisher Creek	1.5254	
Gooseville Creek	0.1234	
Jackson Creek	0.8497	
LaBudde Creek	3.7588	
Meeme Creek	1.7021	
Melius Creek	3.1159	
Mill Creek	1.6382	
Millhome Creek	0.3199	
Mink Creek	11.9243	
Mullet River	10.3833	
North Branch Milwaukee River	10.4792	
Onion River	25.2855	
Otter Creek	3.9405	
Pigeon River	6.6654	
Sevenmile Creek	5.0218	
Sheboygan River	6.6958	
Silver Creek	5.4447	
Stony Creek	2.7334	
Unnamed	74.4802	
Weedons Creek	1.0991	
Total =	186.1065	

## St. Croix County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Apple River	2.0196	
Beaver Creek	4.9835	
Black Brook	0.9969	
Bolen Creek	2.0964	
Cady Creek	1.2028	
Cedar Creek	1.1439	
Dry Run	0.8181	
Eau Galle River	6.4693	
Kelly Creek	0.9533	
Kinnickinnic River	0.0163	
Lohn Creek	1.5055	

Lousy Creek	3.0499	
North Branch Wilson Creek	0.0028	
Nye Creek	0.6340	
Paperjack Creek	0.0017	
Rush River	5.7344	
Ryan Creek	3.0151	
Sandy Creek	0.4536	
South Fork Willow River	4.3762	
South Tiffany Creek	2.5686	
Tenmile Creek	0.7191	
Tiffany Creek	0.3959	
Unnamed	18.9616	
Willow River	12.9906	
Total =	75.1091	

## Washington County, WI

Flooding Source and Reach Limits	Reach Length (miles)	
Allenton Creek	2.8117	
Bark River	0.0003	
Cedar Creek	9.4022	
Coney River	0.0020	
East Branch Milwaukee River	5.4258	
East Branch Rock River	15.1874	
Flynn Creek	5.5222	
Kohlsville River	6.9617	
Limestone Creek	6.0037	
Little Oconomowoc River	3.4161	
Mason Creek	2.0853	
Menomonee River	0.0810	
Milwaukee River	0.0073	
No Name Creek	1.2513	
North Branch Milwaukee River	1.6672	
Oconomowoc River	0.5811	
Rubicon River	1.1742	
Silver Creek	0.0720	
Unnamed	124.7057	
Wayne Creek	4.8024	
Willow Creek	1.3918	
Total =	192.5524	

Appendix B – Budget Projections  
Mapping Activity Statement No. WI-05-01  
August 29, 2005

Adams County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS	\$ 17,000	\$	%	\$

## Calumet County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS	***	\$	%	\$

## Door County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Eau Claire County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Fond Du Lac County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Jefferson County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Kenosha County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Racine County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Sheboygan County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## St. Croix County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR		\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

## Washington County, WI

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 1	Scoping	%	CDM	\$	\$	%	\$
Activity 2	Outreach	11%	WDNR		\$	%	\$
Activity 3	Field Surveys and Reconnaissance	%	CDM	\$	\$	%	\$
Activity 4	Topographic Data Development	%	CDM	\$	\$	%	\$
Activity 5	Independent QA/QC Review of Topographic Data	%	CDM	\$	\$	%	\$
Activity 6	Hydrologic Analyses	17%	WDNR	-	\$	%	\$
Activity 7	Independent QA/QC of Hydrologic Analyses	%	CDM	\$	\$	%	\$
Activity 8	Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 9	Independent QA/QC Review of Hydraulic Analyses	%	CDM	\$	\$	%	\$
Activity 10	Floodplain Mapping (Detailed Riverine or Coastal Analysis)	%	CDM	\$	\$	%	\$
Activity 10A	Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topo Data)	%	CDM	\$	\$	%	\$

Additional work needed to complete project		% of Project	Managed by	FEMA Contribution	CTP Contribution	% Leverage	Total Project Cost
Activity 10B	Floodplain Mapping (Refinement or Creation of Zone A)	23%	WDNR		\$	%	\$
Activity 11	Independent QA/QC Review of Floodplain Mapping (Revised Areas)	6%	WDNR		\$	%	\$
Activity 12	Base Map Acquisition	6%	WDNR		\$	%	\$
Activity 14A	Application of DFIRM Graphic and Database Specifications	37%	WDNR		\$	%	\$
Activity 15	Preliminary DFIRM and FIS Report Distribution	%	CDM	\$	\$	%	\$
Activity 16	Post-Preliminary Processing	%	CDM	\$	\$	%	\$
			TOTALS		\$	%	\$

**Appendix C – Project Schedule**  
**Mapping Activity Statement No. WI-05-01**  
**August 29, 2005**

(Applies to the following Counties: Adams, Calumet, Door, Eau Claire, Fond Du Lac, Jefferson, Kenosha, Racine, Sheboygan, St. Croix, Washington)

<b>Activities</b>	<b>Responsible Partner(s)</b>	<b>Date Due</b>
Activity 1 – Scoping	CDM, WDNR	
Activity 2 – Outreach	WDNR	09/30/06
Activity 3 – Field Surveys and Reconnaissance	CDM	
Activity 4 – Topographic Data Development	CDM	
Activity 5 – Independent QA/QC Review of Topographic Data	CDM	
Activity 6 –Hydrologic Analyses	WDNR	1/31/06
Activity 7–Independent QA/QC Review of Hydrologic Analyses	CDM	
Activity 8 – Hydraulic Analyses	CDM	
Activity 9 – Independent QA/QC Review of Hydraulic Analyses	CDM	
Activity 10 – Floodplain Mapping (Detailed Riverine or Coastal Analysis)	CDM	04/30/06
Activity 10A – Floodplain Mapping (Redelineation Using Effective Flood Profiles and Updated Topographic Data)	CDM	
Activity 10B – Floodplain Mapping (Refinement or Creation of Zone A)	WDNR	
Activity 11 – Independent QA/QC Review of Floodplain Mapping (Revised Areas)	WDNR	05/30/06
Activity 12 – Base Map Acquisition	WDNR	02/28/06
Activity 14A – Application of DFIRM Graphic and Database Specifications	WDNR	07/31/06
Activity 14B – Independent QA/QC Review of DFIRM Product Meeting FEMA Graphic and Database Specifications	WDNR	07/31/06
Activity 15 – Preliminary DFIRM and FIS Report Distribution	CDM	
Activity 16 – Post-Preliminary Processing	CDM	